

SINGLE CHIP BALLAST CONTROL WITH POWER FACTOR CORRECTIONABSTRACT OF THE DISCLOSURE

An integrated circuit provides a complete electronic ballast control with power factor correction for fluorescent lamps. The integrated circuit contains a simplified power factor correction (PFC) circuit to reduce component count and supply voltage requirements to reduce manufacturing costs while providing a robust control. The PFC circuit has a variable gain for fast response at high gain and optimized power factor control at low gain. An increased on time for the PFC switch when the input line voltage approaches zero dynamically reduces crossover distortion, thereby reducing total harmonic distortion. The integrated circuit incorporates a number of fault protections, including undervoltage DC bus, overcurrent, end of life failure, to ignite and filament failure protection. The IC provides inputs for programmable control of a number of functions including preheat frequency and time, run frequency and dead time. The simplified integrated circuit provides a cost effective and comprehensive electronic ballast control in a simple package.